

CLAIMS

1. A heat engine having linear piston rod movement with enhanced energy transfer to rotational output comprises,

a drive transfer assembly having at least one linear driven input rack,

5 a piston interconnected to said input rack,

said piston reciprocately moves within a cylinder,

at least one rack engagement means registerable on said input rack,

at least one output drive shaft rotatably carried by at least one one-way torque transfer means within said rack engagement means,

10 at least one camming element on said output drive shaft, said camming element having an engagement surface,

cam followers extending from said input rack selectively engaging said camming element.

2. The heat engine set forth in claim 1 wherein said rack engagement
15 means comprises a pinion gear.

3. The heat engine set forth in claim 1 wherein said camming element is selectively engaged by said respective cam followers.

4. The heat engine set forth in claim 1 and 3 wherein said camming element is driven by said drive shaft imparting return linear force to said input
20 rack via said respective cam followers.

5. The heat engine set forth in claim 1 wherein the eccentricity of the camming element engagement surface on said cam followers imparts a return torque transfer to said input rack during a non-powered linear return path.

6. The heat engine set forth in claim 1 wherein said linear driven input rack has frictional engagement surface formed thereon and resilient engagement means registerable with said linear drive input rack.

7. A heat engine set forth in claim 1 wherein said rack engagement means registerable on said input rack comprises a frictional roller engaging a registerable surface on said input rack under bi-lateral pressure.

8. The heat engine set forth in claim 1 wherein said piston interconnection to said input rack is in longitudinal axial forced transfer alignment with said pistons for reduced angular force displacement of said pistons within said cylinders.

9. The heat engine set forth in claim 1 wherein said linear driven input rack further comprises, a motion transfer friction engagement surface on said rack for engagement by said rack engagement means.

10. The heat engine set forth in claim 1 and 9 wherein said rack engagement means further comprises, a friction roller assembly on said torque transfer means for engagement with said motion transfer frictional engagement surface on said linear driven input rack.